RESTRICTION PRESENTED

The claims have been restricted into the following groups of inventions:

Groups	Claims	Subject Matter
I	1-4	Isolated and purified biologically active heparin sulfate 3-O-sulfotransferase 5 polypeptide, wherein the polypeptide comprises: (a) a polypeptide encoded by a nucleic acid sequence as set forth in SEQ ID NO 1; (b) a polypeptide encoded by a nucleic acid sequence having greater than 90% sequence identity to SEQ ID NO 1; (c) a polypeptide having an amino acid sequence as set forth in SEQ ID NO2; (d) a polypeptide which is a biological equivalent of the polypeptide set forth in SEQ ID NO 2; (e) a polypeptide which is immunologically cross-reactive with an antibody which is immunoreactive with a polypeptide comprising part or all of the amino acids of SEQ ID NO 2; or (f) a polypeptide encoded by a nucleic acid molecule capable of hybridizing under stringent conditions to a nucleic acid molecule comprising the nucleotides of SEQ ID NO 1, or a complement thereof.
II	5	An isolated and purified antibody capable of specifically binding to the polypeptide of an isolated and purified biologically active heparan sulfate 3-O-sulfotransferase 5 polypeptide.
III	6-12	An isolated and purified nucleic acid molecule encoding a biologically active heparan sulfate 3-O-sulfotransferase 5 polypeptide.
IV	13	A recombinant host cell comprising an isolated and purified nucleic acid molecule encoding a biologically active heparan sulfate 3-O-sulfotransferase 5 polypeptide.
V	14	A transgenic non-human animal having incorporated into its genome a xenogeneic nucleic acid molecule encoding a biologically active heparan sulfate 3-O-sulfotransferase 5 polypeptide, the nucleic acid molecule being present in the genome in a copy

		number effective to confer expression in the animal of the heparan sulfate 3-O-sulfotransferase 5 polypeptide.
VI	15-16	A method of producing an antibody immunoreactive with a heparan sulfate 3-O-sulfotransferase 5 polypeptide, the method comprising: (i) transfecting a recombinant host cell with a nucleic acid molecule of claim 6, which encodes a heparan sulfate 3-O-sulfotransferase 5 polypeptide; (ii) culturing the host cell under conditions sufficient for expression of the polypeptide; (iii) recovering the polypeptide; and (iv) preparing an antibody to the polypeptide.
VII	17	A method of detecting a heparan sulfate 3-O-sulfotransferase polypeptide, the method comprising immunoreacting the polypeptide with an antibody prepared according the method of claim 15 to form an antibody-polypeptide conjugate; and detecting the conjugate.
VIII	18	A method of detecting a nucleic acid molecule that encodes a heparan sulfate 3-O-sulfotransferase 5 polypeptide in a biological sample containing nucleic acid material, the method comprising: (i) hybridizing the nucleic acid molecule, of a nucleic acid molecule encoding an isolated and purified biologically active heparan sulfate 3-O-sulfotransferase 5 polypeptide, under stringent hybridization condition to the nucleic acid material of the biological sample, thereby forming a hybridization duplex; and (ii) detecting the hybridization duplex.
IX	19-25	An assay kit for detecting the presence of a heparan sulfate heparan sulfate 3-O-sulfotransferase polypeptide in biological sample, the kit comprising a first antibody capable of immunoreacting with a polypeptide of claim 1.
X	26-28	A method of screening candidate substances for an ability to modulate heparan sulfate 3-O-sulfotransferase 5 polypeptide biological activity, the method comprising: (i) establishing test samples comprising a heparan sulfate 3-O-sulfotransferase 5

		polypeptide; (ii) administering a candidate substance to the test samples; and (iii) measuring the interaction, effect, or combination thereof, of the candidate substance on the test sample to thereby determine the ability of the candidate substance to modulate heparan sulfate 3-O-sulfotransferase 5 polypeptide biological activity.
XI	29	A recombinant cell line suitable for use in the method of claim 28.
XII	30-34	A method of modulating heparan sulfate 3-O-sulfotransferase 5 polypeptide biological activity in a vertebrate subject, the method comprising the step of administering to the vertebrate subject an effective amount of a substance capable of modulating activity of a heparan sulfate 3-O-sulfotransferase 5 polypeptide in the vertebrate subject to thereby modulate heparan sulfate 3-O-sulfotransferase 5 polypeptide activity in the vertebrate subject.
XIII	35-36	A composition comprising an effective amount of a modulator of a biological activity of a heparan sulfate 3-O-sulfotransferase 5 polypeptide, and a pharmaceutically acceptable diluent or vehicle.
XIV	37-42	A method for modulating transfer of sulfate to the 3-OH position of a glucosamine residue of heparan sulfate in a vertebrate subject, the method comprising introducing to a target tissue producing heparin sulfate in the vertebrate subject a construct comprising a nucleic acid sequence encoding a heparan sulfate 3-O-sulfotransferase 5 gene product operatively linked to a promoter, wherein production of the heparan sulfate 3-O-sulfotransferase 5 gene product in the target tissue results in modulation of transfer of sulfate to the 3-OH position of a glucosamine residue of heparan sulfate.
XV	43-53	A method for modulating production of 3-O-sulfated heparan sulfate in a vertebrate subject, the method comprising introducing to a target tissue comprising cells producing heparan sulfate in said vertebrate subject a construct comprising a nucleic acid

		sequence encoding a heparan sulfate 3-O-sulfotransferase 5 gene product operatively linked to a promoter, wherein production of the heparan sulfate 3-O-sulfotransferase 5 gene product in the target tissue results in modulation of production of 3-O-sulfated heparan sulfate.
XVI	54-60	A method for increasing the efficacy of treating a disorder using a virus vector for delivering therapeutic nucleic acid molecules to the cells of a subject, comprising administering to the subject a construct comprising a nucleic acid sequence encoding a heparan sulfate 3-O-sulfotransferase 5 gene product operatively linked to promoter prior to administration of the virus vector, wherein production of the heparan sulfate 3-O-sulfotransferase 5 gene product in the cells results in increased expression of 3-O-sulfated heparan sulfate, and wherein the 3-O-sulfated heparan sulfate is an entry receptor for the virus vector.

APPLICANTS' ELECTION

Applicants hereby elect the invention of Group I, claims 1 through 4, drawn to isolated and purified biologically active heparin sulfate 3-O-sulfotransferase 5 polypeptide, wherein the polypeptide comprises: (a) a polypeptide encoded by a nucleic acid sequence as set forth in SEQ ID NO 1; (b) a polypeptide encoded by a nucleic acid sequence having greater than 90% sequence identity to SEQ ID NO 1; (c) a polypeptide having an amino acid sequence as set forth in SEQ ID NO2; (d) a polypeptide which is a biological equivalent of the polypeptide set forth in SEQ ID NO 2; (e) a polypeptide which is immunologically cross-reactive with an antibody which is immunoreactive with a polypeptide comprising part or all of the amino acids of SEQ ID NO 2; or (f) a polypeptide encoded by a nucleic acid molecule capable of